Computer Science Bachelor of Science Program
Catalog year 2023-2024

FRESHMAN YEAR

First Semester	Credits	Second Semester	Credits
Lab Science[1]	4	Lab Science[1]	4
MATH 1131Q – Calculus I	4	Math 1132Q – Calculus II	4
CSE 1010 – Intro to Computing for Engineers	3	CSE 2050 – Data Structures & Object-Oriented Design	3
ENGR 1000 – Orientation to Engineering	1	ENGL 1007 – Seminar in Writing	4
Area 2 (Social Sciences)	3		
	15		15

SOPHOMORE YEAR

First Semester	Credits	Second Semester	Credits
Lab Science[1]	4	CSE 3666 - Intro to Computer Architecture	3
CSE 2500 - Intro to Discrete Systems	3	CSE 3500 - Algorithms and Complexity	3
CSE 3100 - Systems Programming	3	CSE 3140 - Cybersecurity Lab	2
MATH 2110Q - Multivariable Calculus	4	Area 2 (Social Science)	3
Area 1 (Arts and Humanities)		PHIL 1104 (Area 1) – Phil. and Soc Ethics	3
	3		14
	17		

JUNIOR YEAR

First Semester	Credits	Second Semester	Credits
CSE xxxx - Concentration course 1	3	CSE xxxx - Concentration course 2	3
CSE 3150 - C++ Essentials **or**	3	Area 4 Course (Diversity and Multiculturalism)	3
CSE 3160 - Functional Programming Fundamentals			
Prob. and Stat.Course[2]	3	CSE 3000 - Contemporary Issues in CSE	1
MATH 2210Q - Linear Algebra	3	CSE Elective[3]	3
Elective	3	Elective	3
	15	Elective	3
			16

SENIOR YEAR

First Semester	Credits	Second Semester	Credits
CSE 4939W - CSE Design Project I	3	CSE 4940 - CSE Design Project II	3
CSE xxxx - Concentration course 3	3	CSE xxxx - Concentration course 4	3
Area 4 (Diversity and Multiculturalism)	3	Elective	3
Elective	3	Elective	3
Elective	3	Elective[4]	2+
	15		13+

Additionally, the program must include 1) one W course other than CSE 4939W, which may be used to satisfy other requirements or Free Electives, and 2) one E course of at least three credits in Environmental Literacy.

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1 A two-course sequence must be selected from one of the following sequences. CHEM 1127Q-1128Q; CHEM 1137Q-1138Q; CHEM 1147Q-1148Q; PHYS 1401Q-1402Q; PHYS 1501Q-1502Q; or PHYS 1601Q-1602Q. An additional course must be selected from the following list (but not in the same department as the two-semester sequence): BIOL 1107, 1108, or 1110; CHEM 1127Q, or 1128Q; PHYS 1401Q, 1402Q, 1502Q, 1601Q, or 1602Q; ERTH 1050, or ERTH 1051 and 1052

2 One of MATH 3160, STAT 3025Q, STAT 3345Q, or STAT 3375Q

3 As needed to reach a minimum of 43 CSE credits.

4 As needed to reach a minimum of 120 credits.

Computer Science Concentration Requirements

Every CSE major must satisfy the requirements for a concentration. A concentration consists of four courses within a defined set of alternatives (one or more of the courses may be required for the concentration). A student must declare a single concentration to count toward graduation; that is the one that will be listed on his or her transcript. There are currently 9 concentrations available, these are listed below. For information about the concentration requirements, see the ***Guide to Course Selection***.

Concentration 1: Algorithms and Theory

Concentration 2: Systems and Networks

Concentration 3: Cybersecurity

Concentration 4: Bioinformatics

Concentration 5: Software Design and Development

Concentration 6: Computational Data Analytics

Concentration 7: Naval Science and Technology

The concentration in Naval Science and Technology is designed to expose students to engineering concepts and topics of importance to the Navy and industries that support naval science and technology. It is focused on facilitating interactions between students and naval professionals as well as hands-on and experiential activities related to senior design projects or independent study projects that have naval science and technology connections.

Concentration 8: Unspecialized

For the Unspecialized concentration, students must take required courses from 3 different concentrations, plus any other 2000+ level CSE course not used to fulfill another requirement.

Concentration 9: Individually Designed

Students may propose an individually-designed concentration to fit their academic or career interests. This will be a minimum of 12 credits at the 2000+ level, proposed by the student and approved by the student's advisor and the CSE Department Undergraduate Committee. The expectation is that such a concentration will have a strong unifying theme. This may include non-CSE courses, but the student will still be subject to the overall requirement of 43 CSE credits.